

## Amendments to the Specification

Please add the following new paragraph on page 1, after line 2, as follows:

### Cross Reference to Related Applications

This application is a filing under 35 U.S.C. § 371 and claims priority to international patent application number PCT/GB2003/002983 filed July 10, 2003, published on January 29, 2004 as WO 2004/009847 and also claims priority to patent application number 0216674.2 filed in Great Britain on July 18, 2002; the disclosures of which are incorporated herein by reference in their entireties.

Please replace the paragraph on page 6, lines 15-28, with the following amended paragraph:

According to a first aspect of the present invention, there is provided a method for determining the function or effect of a genetic element or a chemical modulator from a library of genetic elements and chemical modulators of known and unknown function on a population of cells, the method comprising

- i) determining the distribution of an indicator nucleic acid sequence being expressed in the cells in the presence and the absence of a first chemical modulator, which modulator affects the distribution of the indicator, wherein the cells are ~~either~~ both co-expressing an effector nucleic acid sequence ~~or~~ and are in the presence of a second chemical modulator; and

- ii) analysing the distribution data from all combinations of the effector, modulator and indicator to derive functional linkages and assign function to the effector and the second modulator.

Please replace the paragraph on page 7, lines 13-30, with the following amended paragraph:

In a second aspect of the present invention, there is provided a method for determining the function or effect of a genetic element or a chemical modulator from a library of said genetic elements and chemical modulators of known and unknown function on a population of cells, the method comprising

- i) determining the distribution of an indicator nucleic acid sequence being expressed in said cells in the presence of a first chemical modulator, which modulator affects the distribution of the indicator, wherein the cells are ~~either~~ both co-expressing an effector nucleic acid sequence ~~or~~ and are in the presence of a second chemical modulator;
- ii) comparing the distribution data of i) above with known distribution data, stored on an electronic or optical database, for the indicator nucleic acid sequence in the absence of the first chemical modulator; and
- iii) analysing the distribution data from all combinations of the effector, modulator and indicator to derive functional linkages and assign function to the effector and the second modulator.

Please delete the paragraph beginning on page 8, line 1, which starts with “Optionally, the cells in step (i)”.

Please delete the paragraph beginning on page 13, line 12, which starts with “In a fourth aspect of the present invention”.

Please delete the paragraph beginning on page 13, line 18, which starts with “In a fifth aspect of the present invention”.

Please replace the heading on page 28, line 1, with the following amended heading:

**Claims**

What is claimed is: